

Remarks/Arguments

Summary

By this Amendment, claims 27-38 have been canceled. Accordingly, claims 1-26 are now pending in the application.

Allowable Claims

Applicants acknowledge with thanks the indicated allowability of dependent claims 11 and 12.

Also, the Examiner is requested to clarify the status of dependent claim 26, which has apparently not been subjected to a rejection.

35 USC 102 – Claims 37-38 (Seaver et al.)

The rejection of claims 37-38 under 35 USC 102 has been rendered moot by the cancellation of these claims.

35 USC 103 – Claims 1-10 and 13-25 (Laermer et al.)

Claims 1-10 and 14-25 were rejected under 35 U.S.C. 103 as being unpatentable over Laermer et al. (US 5501893) in view of the admitted prior art. Applicants respectfully traverse this rejection.

As noted in Applicant's previous response, Laermer is directed to a two step process in which the first step combines the removal of passivation material from the bottom of a feature and the primarily chemical etching of the silicon. The second step involves the deposition on passivation material on all surfaces (in fact limited to a polymer). In both steps, a plasma is required (see, e.g., claim 1 of Laermer et al.). For this two step process, anisotropic etching of the silicon occurs when the two steps are repeated in sequence.

For the two step process of Laermer, it would not be possible to carry out the etch step in the absence of a plasma, since it is the ions from the plasma that remove the passivation material from the bottom of the feature and therefore allow

the etching of the silicon by the chemical etching process. It is the plasma that provides both the source of ions and the source of chemically reactive species.

An inventive aspect of the presently claimed invention is not the use of liquids or vapours in the etch or passivation steps, but the recognition that to achieve highly anisotropic etching of a material it is necessary to alternate etch and passivation steps, and that in the absence of a plasma in one of the steps, it is necessary to use a three step process with a defined directed passivation removal step and a defined etch step in addition to the step in which passivation material is deposited. It may be very desirable to use a plasmaless step if the rate of respective etch or deposition is significantly greater than could be achieved for a plasma based processes. While the use of liquids or vapours to etch or deposit layers on materials is recognized as well known prior art, it would not be obvious to a person skilled in the art to combine at least one plasmaless step with other plasma based or plasmaless steps to achieve highly anisotropic etching, in a three step process.

For at least the reasons stated above, and the reasons already of record, Applicants respectfully contend that Claims 1-10 and 13-25 are not obvious in view of the teachings of Laermer et al., taken alone or in combination with the admitted prior art.

35 USC 103 – Claims 27-33 (Laermer et al.)

The rejection of claims 27-33 under 35 USC 103 has been rendered moot by the cancellation of these claims.

35 USC 103 – Claims 34-36 (Laermer et al.)

The rejection of claims 34-36 under 35 USC 103 has been rendered moot by the cancellation of these claims.

35 USC 112 – Claims 27 and 33

The rejection of claims 27 and 33 under 35 USC 112 has been rendered moot by the cancellation of these claims.

Conclusion

No other issues remaining, reconsideration and favorable action upon the claims 1-26 now present in the application are requested.

Respectfully submitted,

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